What is claimed is:

1. Copper particle clusters for conductive paste individually composed of two or more unit particles joined through neck portions.

2. Copper particle clusters for conductive paste individually composed of not fewer than two and not more than 20 unit particles joined through neck portions.

3. Copper particle clusters according to claim 1 or 2, wherein the unit particles are 0.5-10 μm in diameter.

4. Copper particle clusters according to claim 1 or 2, wherein the neck portions are smaller in diameter than the unit particles they join.

5. A process for producing a copper powder including copper particle clusters comprising a step of precipitating copper hydroxide by reacting an aqueous solution of a copper salt and an alkali to obtain a suspension containing copper hydroxide, an intermediate reduction step effected by adding a reducing agent to the suspension to reduce the copper hydroxide to cuprous oxide, and a final reduction step of reducing the cuprous oxide in the suspension to metallic copper using a reducing agent, in which process the copper hydroxide precipitating step is conducted under an atmosphere of an oxygen-containing gas.

6. A process according to claim 5, wherein the copper hydroxide precipitating step is conducted in an aqueous solution of an Fe concentration of not greater than 50 ppm.

7. A process according to claim 5, further comprising a step of blowing an oxygen-containing gas into the suspension containing cuprous oxide after the intermediate reduction step.

8. A conductive filler for conductive paste consisting essentially of a mixture of copper particle clusters A individually composed of two or more unit particles joined through neck portions and spherical metallic particles B of smaller diameter than the particles A.

9. A conductive filler according to claim 8, wherein the spherical metallic particles B are mixed with the copper particle clusters A at a rate such that the weight ratio of B to A (B/A) is in the range of 1/19 to 3/5.

10. A conductive filler according to claim 8, wherein the ratio of the average particle diameter D_A of the copper particle clusters A to the average particle diameter D_B of the spherical metallic particles B (D_A/ D_B) is in the range of 5/4 to 8/1.

11. A conductive filler according to claim 8, wherein the spherical metallic particles B are copper particles or copper particles coated with silver.

12. A conductive filler according to claim 10, wherein the average particle diameter D_A of the copper particle clusters A is in the range of 4-8 μm.

13. A conductive filler according to claim 8, wherein the copper powder composed of the copper particle clusters A is one that has been subjected to surface smoothing treatment by causing mechanical contact among the copper particle clusters A.

14. A conductive paste comprising a binder resin and, dispersed in the binder resin, a metallic powder composed essentially of a copper powder including copper particle clusters A individually composed of two or more unit particles joined through neck portions and spherical metallic particles B of smaller diameter than the particles A, particles B being present in spaces between particles A.

15. A conductive paste according to claim 14, wherein the binder resin is a thermosetting resin.